



INSTALLATION & OPERATING INSTRUCTIONS

REFRIGERATOR FOR AC & DC OPERATION

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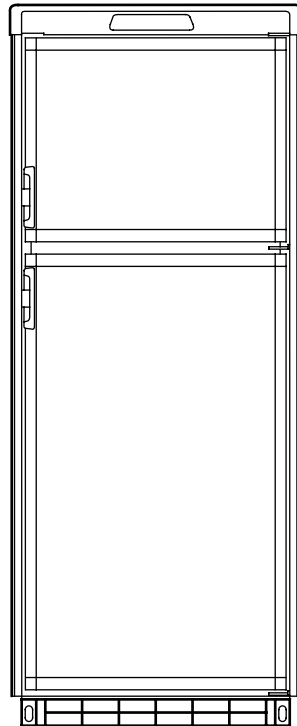
RECORD THIS INFORMATION FOR FUTURE REFERENCE
BEFORE INSTALLING THE UNIT:

Model No. _____ Serial No. _____

Product No. _____

Date Purchased _____ Place of Purchase _____

Model RM 8602



Contents

	Page
Installation	4
Operating instruction	7
Maintenance & Service	9

! WARNING

Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage. Refer to this manual. For assistance or additional information consult a qualified installer, service agency.

**IMPORTANT INSTRUCTIONS
READ CAREFULLY**

FOREWORD

Introduction

Congratulations on choosing this refrigerator product from Origo. We are convinced that it will work to your complete satisfaction.

This noiseless appliance corresponds to the highest quality standards.

Before using the refrigerator for the first time, please be sure to read the installation and operating instructions fully

Unpacking

When unpacking the refrigerator check that nothing is missing or damaged.

Transit damage must be reported immediately to whoever is responsible for the delivery.

Data plate

Check the data plate, inside the refrigerator, to ensure that you have received the right model.

The data plate contains e.g. the following details:

Model No.
Product No.
Serial No.

Since these details will be needed if you have to contact service personnel, it is a good idea to make a note of them on the front page.

FOR YOUR SAFETY

Warning and safety advice

- Risk of child entrapment. Before you throw away your old refrigerator: Take off the doors and leave the shelves in place, so that children may not easily climb inside.
- Never open the cooling system, it is kept under high pressure.
- Never store flammable materials, such as lighter gas, petrol or ether in the refrigerator.
- The refrigerator must be installed in such a way that there is no direct contact with the cooling system in back (it becomes very warm during operation).
- The electrical installation must be carried out in a proper and durable manner; taking into account all relevant regulations and codes of practice.
- The 120V energy supply must be grounded according to safety standard regulations to a fixed ground.
- Any maintenance is to be carried out by authorized service personnel only.

Coolant

Ammonia is refrigerant.

In the unlikely event of a leak (easy to recognize because of the smell), switch off the appliance, unplug it if necessary, and ventilate the space thoroughly.

INSTALLATION

Installation of the refrigerator

The refrigerator is designed for build-in applications. The refrigerator must not be exposed to the radiated heat from other hot objects (e.g. near by a stove without proper heat shielding).

Place the refrigerator so that the circulation of air around the cooling unit is not obstructed.

It is important not to obstruct the ventilation grilles.

NOTE: There must be adequate space in front of the refrigerator for eventual servicing purposes. The refrigerator has to be withdrawn to reach the back of the refrigerator.

NOTE: The ventilation grille to the outgoing air must have a free flow-through area of at least 60 sq. in. (390 cm²).

Failure to correctly vent the refrigerator will result in void of the warranty.

It is important not to obstruct the ventilation grilles.

Forced air circulation

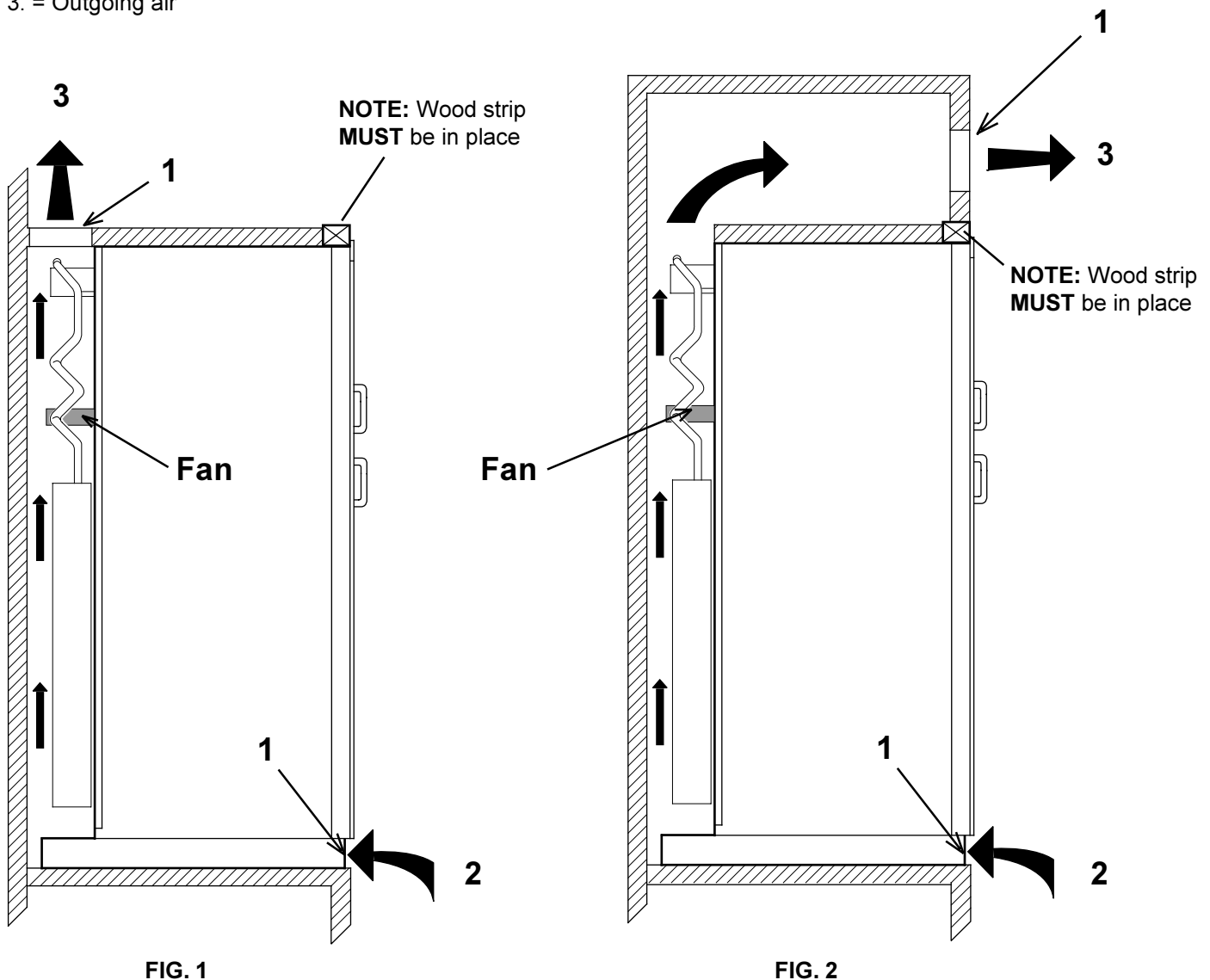
The refrigerator is equipped with a fan, for better air circulation (see FIG. 1 & 2).

The fan is connected to a thermostat that switch the fan on and off automatically.

Ventilation

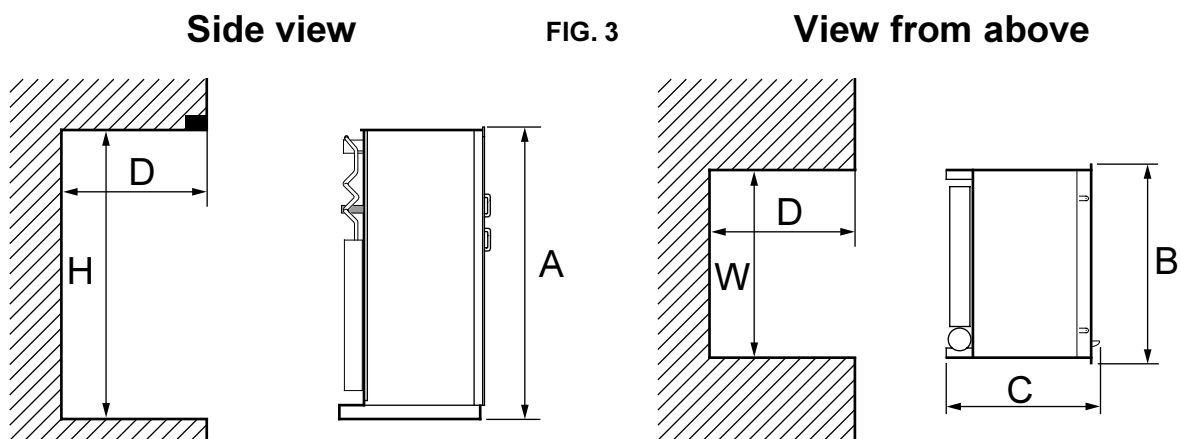
Fig. 1 and Fig. 2 show you two different built-in variants for proper ventilation of the refrigerator:

- 1. = Ventilation grille
- 2. = Inlet air
- 3. = Outgoing air



Installing refrigerator in enclosure

NOTE: DO NOT install the appliance directly on carpeting. Carpeting must be removed or protected by a metal or wood panel beneath the appliance which extends at least full width and depth of the appliance.



Refrigerator Model	Overall Dimensions			Recess Dimensions		
	Height A	Width B	Depth C	Height H	Width W	Depth D
RM 8602 (inches)	56-1/32	24-7/8	26-1/32	55-9/16	23-11/16	24-1/4
(mm)	1423	632	661	1411	602	616

NOTE: A wood strip must be in place across the upper opening of the enclosure. The top frame of the refrigerator will be anchored to the wood strip with screws, see FIG. 1.

Securing refrigerator in enclosure

Push the refrigerator into the enclosure until the front frame is tight against the cabinet. Secure the refrigerator with four screws. The screws have to be installed in the following order:

STEP 1: Two screws installed through the front base, one on each side see FIG. 4.

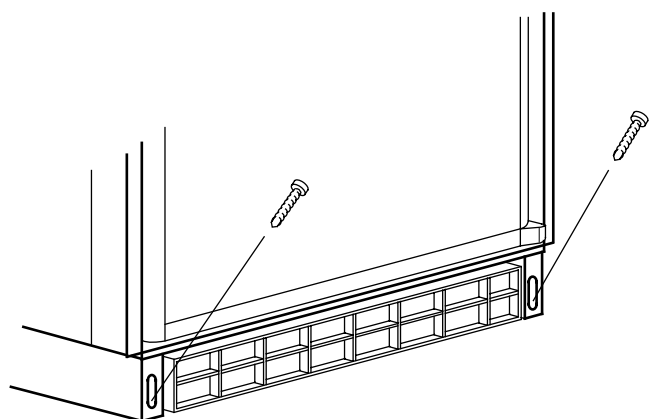


FIG. 4

STEP 2: Two screws installed in the top frame.

The top decoration panel must be removed from the refrigerator before the screws can be installed. Open the upper door and gently push the tabs out of the hole in the hinge with a flat blade screwdriver, (both sides). See FIG. 5.

Carefully tilt the top decoration panel and lift up to remove from top frame. Be careful not to damage the circuit board and wires.

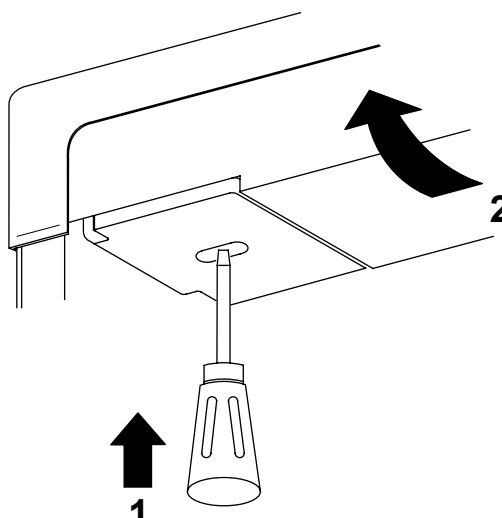


FIG. 5

Install the two screws in the top frame, the holes are accessible from underneath, see FIG. 6.

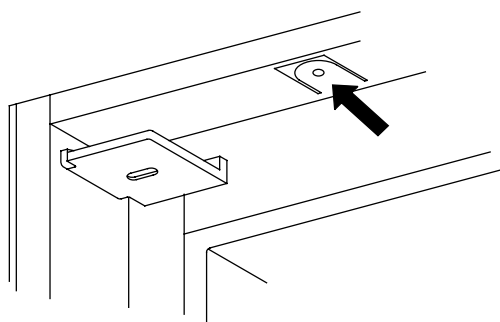


FIG. 6

Replace the top decoration panel. Be careful not to pinch the wires behind the panel. Make sure the tabs snap back into the holes in the hinge plate. If installed according to FIG. 1 the space between the counter and the top of the refrigerator should be blocked with a material, such as foam strips. Otherwise, the heat produced at the rear of the refrigerator will become trapped in this space, making the top of the refrigerator hot and reduce the efficiency of the refrigerator.

Repositioning the hinges

The refrigerator is equipped with reversible doors. Use the special door reversing kit to reverse the doors.

Instructions for mounting the door panel

The refrigerator is normally delivered without door panels. Before starting the mounting work, check that the panel dimensions are in compliance with those given in the table and the instructions are read thoroughly.

When mounting the panel, proceed as follows:

- Open the door 90 degrees.
On new refrigerators, the decoration strips are taped inside the door; if installed on the door, remove the door decoration strip by removing its three screws on the top of the door.
- Insert the vertical edges into the grooves of the door frame.
- Push the panel downward so that the lower horizontal edge of the panel is fitted into the bottom groove.
- Put the decoration strip across the door so that the gap is covered. Secure the decoration strip with the three screws removed in Step A.

PANEL DIMENSIONS MAX.THICKNESS 5/32" (4 mm)					
MODEL TYPE		HEIGHT MAX. MIN.		WIDTH MAX. MIN.	
RM 8602	upper	inch	15-27/32	20-3/4	20-5/8
		mm	403	527	524
	lower	inch	32-9/16	20-3/4	20-5/8
		mm	827	527	524

ELECTRICAL INSTALLATION

Automatic energy selection between AC/DC

The priority of energy sources is AC (when available)!

120 V connection

Check that the voltage stated on the data plate is the same as the voltage in use (120 V).

The refrigerator is equipped with a three-prong (grounded) plug for protection against shock hazards and should be plugged directly into a properly grounded three-prong receptacle. DO NOT cut or remove the grounding prong from this plug.

Electrical leads must be routed and secured to avoid direct contact with hot or sharp parts of the refrigerator.

12 V connection

The 12 V connection is made to the positive (+) and negative (-) terminals of the terminal block on the back of the refrigerator. Connect the refrigerator to the battery by a direct cable. Correct polarity must be observed when connecting to DC supply. Do not use the chassis for the return lead.

The distance the current must travel from the battery to the refrigerator (+ and - wire together) dictates the AWG wire size to be used. Should the wire be too small for the distance, a voltage drop will result and cause a decreased cooling capacity. Recommended wire sizes are shown below.

MAXIMUM TOTAL CONDUCTOR WIRE LENGTH (in feet and meters)

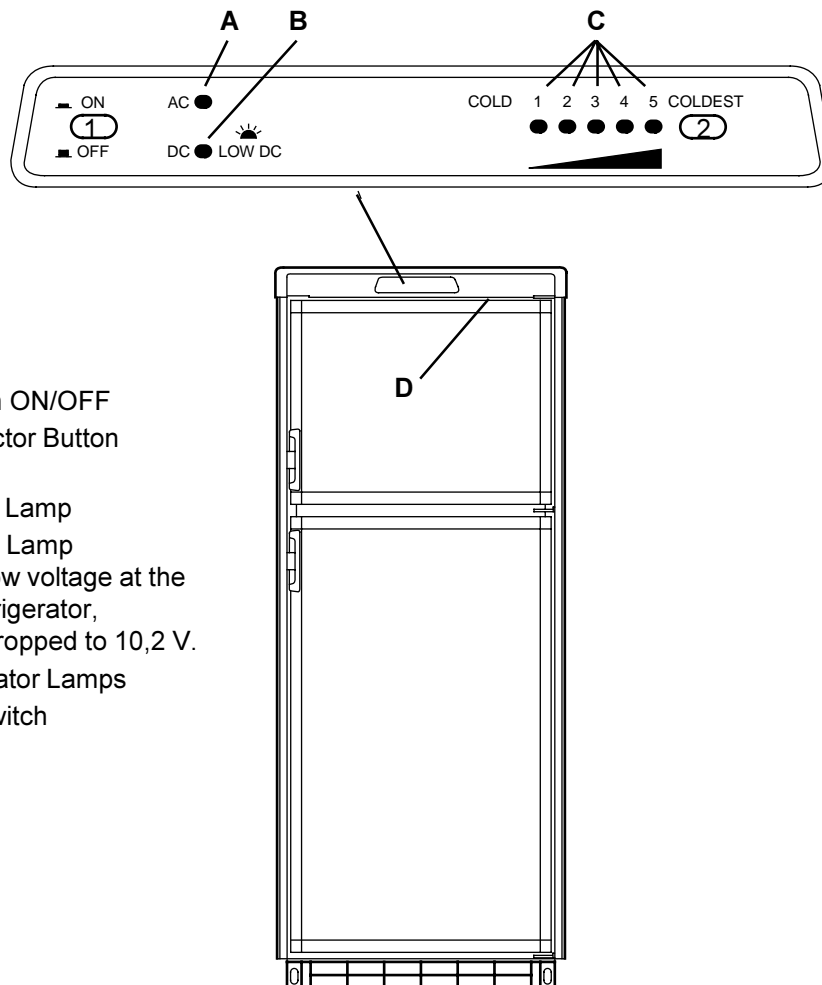
AWG 10	17 feet 5 m
AWG 8	32 feet 9 m
AWG 6	50 feet 15 m

The wires from the battery to the refrigerator must be of large enough size, to handle the load. The connections must be clean, tight and free from corrosion.

OPERATING INSTRUCTIONS

Control panel

FIG. 7



LEGEND

1. Main Power Button ON/OFF
 2. Temperature Selector Button
-
- A. AC Mode Indicator Lamp
 - B. DC Mode Indicator Lamp
(When flashing: Low voltage at the terminal on the refrigerator, the voltage have dropped to 10,2 V.
 - C. Temperature Indicator Lamps
 - D. Climate Control Switch

Start up instructions

1. Press the main power ON/OFF button (1) to the DOWN position.
2. Press the TEMPERATURE SELECTOR button (2) until the lamp at the desired setting is illuminated.

120 V Operation

Before starting the refrigerator, check that the voltage stated on the data plate is the same as the voltage in use.

- A. If 120 V AC is available the AC mode indicator lamp (A) will illuminate indicating AC operation.
- B. Press the TEMPERATURE SELECTOR button (2) until the lamp at the desired setting is illuminated.

12 V Operation

- A. If 120 V AC is not available, the DC mode indicator lamp (B) will illuminate and the control system will automatically switch to DC operation.
- B. Press the TEMPERATURE SELECTOR button (2) until the lamp at the desired setting is illuminated.

Low DC voltage

If the DC lamp start flashing the voltage at the terminal have dropped to 10,2 V.
If no charging is available the refrigerator will shut off.

Thermostat

The thermostat on the refrigerator controls both the 120 V and 12 V operation, thereby eliminating the necessity of resetting each time a different energy source is employed.

After the initial start-up, the thermostat should be moved from "COLDEST" to the desired temperature setting, usually about mid setting.

To shut off the refrigerator

The refrigerator may be shut of while in any mode of operation by pressing the main power ON/OFF button (1) to the up (OFF) position.

Climate control heater

During the summer months of high temperatures and humidity, the metal frame between the freezer and fresh food compartments may have water droplets forming.

This refrigerator comes standard with a 12 V (DC) climate control that will evaporate the water droplets when they form.

To have the climate control on, you position the switch ("D" see figure 7) located beneath the top decoration panel that houses the control panel to ON. The climate control can be left on continuously or only used when temperatures require it.

NOTE: The climate control will draw 12 volts DC power continuously when in the ON position. At 12 V operation the climate control should be turned OFF when a charging source is not available.

Food storage compartment

The food storage compartment is completely closed and unventilated, which is necessary to maintain the required low temperature for food storage. Consequently, foods having a strong odor or those that absorb odors easily should be covered. Vegetables, salads etc. should be covered to retain their crispness. The coldest positions in the refrigerator are under the cooling fins and at the bottom of the refrigerator. The warmer areas are on the upper door shelves. This should be considered when placing different types of food in the refrigerator.

Frozen food storage compartment

Quick frozen soft fruits and ice cream should be placed in the coldest part of the compartment which is at the bottom of the aluminum liner.

Frozen vegetables, may be stored in any part of the compartment.

This compartment is not designed for deep or quick freezing of food. Meat or fish, whether raw or prepared, can be stored in the frozen food storage compartment provided they are pre-cooled first in the refrigerator. They can be stored about three times longer in the frozen food compartment as compared to the fresh food compartment.

To prevent food from drying out, keep it in covered dishes, containers, plastic bags or wrapped in aluminum foil.

Ice making

Ice cubes can be made in the freezer compartment. For faster ice making, the trays should be placed in direct contact with the bottom of the freezer compartment.

Ice will be made more rapidly if the thermostat is set at its highest position. It is a good idea to do this a few hours before the anticipated need for ice, but be sure to move the thermostat back to normal setting when the ice is formed. Food in the lower compartment may be frozen if the setting is left on "COLDEST" position.

Defrosting

Shut off the refrigerator by pressing the main power ON/OFF button to the up (OFF) position.

Empty the refrigerator, leaving the drip tray under the finned evaporator, and the cabinet and freezer doors open.

!CAUTION

DO NOT use a hot air blower. Permanent damage could result from warping the metal or plastic parts. DO NOT use a knife or an ice pick, or other sharp tools to remove frost from the freezer compartment. They can create a leak in the ammonia system.

The defrost water runs from the drip tray to a receptacle at the rear of the refrigerator where it evaporates. Defrost water in the freezer compartment should be mopped up with a cloth.

When the ice has melted, dry the interior of the refrigerator with a clean cloth and restart it.

Replace all food and set the thermostat to the "COLDEST" temperature setting for a few hours. Then reset the thermostat to the desired setting, usually at mid setting.

Cleaning

Cleaning the refrigerator is usually done after it is defrosted or put into storage. To clean the interior liner of the refrigerator, use lukewarm weak soda solution. Use only warm water to clean the finned evaporator and shelves.

NEVER use strong chemicals or abrasives to clean these parts as the protective surfaces will be damaged.

It is important to always keep the refrigerator clean.

Shut off - storage procedure

Shut off the refrigerator by pressing the main power ON/OFF button (1) to the up (OFF) position.

If the refrigerator will not be in operation for a period of weeks, it should be emptied, defrosted, cleaned and the doors left ajar.

!WARNING

DO NOT store explosive substances in the refrigerator, such as cigarette lighter gas, petrol, ether or the like.

MAINTENANCE & SERVICE

The user should be aware of service that must be done on a regular schedule to keep the refrigerator operating properly. The service should only be performed by a qualified technician who is familiar with the refrigerator.

Refrigerator removal

Before working on the refrigerator, make sure the AC voltage and DC voltage leads are disconnected. Loosen the screws anchoring the refrigerator to the enclosure and slide the refrigerator out of the compartment.

Replacement is the reverse of removal.

Refer to section **INSTALLATION**, page 4 to 6.

Cartridge heater

RM 8602 is equipped with two electrical heaters, one for 120 volt AC and one for 12 volt DC.

To replace the heater proceed as follows:

1. Disconnect the wall plug, and the 12 volt wires.
2. Remove the power module cover at the back of the refrigerator, do not bend the tube to the cooling unit.
3. Disconnect the heater leads.
4. With a pair of pliers unfold the lug holding the lid of the boiler casing and open the lid.
5. Remove some insulation wool so that the heater is accessible.
6. Turn and lift the heater out of its pocket.
7. Fit the new heater into the pocket.
8. Connect the leads and put on the power module cover.
9. Reset the insulation and close the lid of the boiler.

Fuses

RM 8602 is equipped with two fuses, one for the refrigerator control system and one for the AC cartridge heater (see table below).

1. Disconnect the wall plug, and the 12 volt wires.
2. Remove the power module cover at the back of the refrigerator, do not bend the tube to the cooling unit.
3. Snap the fuse out of the fuse holder.
4. Fit a new fuse in the fuse holder.
5. Replace the power module cover.

Control system	3 Amp
AC heater	5 Amp

Troubleshooting

If the refrigerator fails to work, check the following points before calling a service technician.

- A. Instructions for starting the refrigerator, have been followed.
- B. Is it possible to start the refrigerator on any of the connected sources of energy.
- C. If the refrigerator fails to work on 12 V DC, check:
 - That the 12 V supply is connected to the refrigerator.
- D. If the refrigerator fails to work on 120 V AC, check:
 - That the 120 V supply is connected to the refrigerator.
- E. If the refrigerator is not cold enough it may be because:
 - The ventilation is inadequate, vents are blocked, undersized or not properly positioned (see section **INSTALLATION**, page 4).
 - The evaporator is frosted up.
 - The thermostat setting is incorrect.
 - Too much warm food is loaded at one time.
 - The door is not properly closed or the magnetic sealing strip is defective.

Technical Data

Capacity:

Total	6 cu. ft.	(171 litre)
Freezer	1.7 cu. ft.	(47 litre)
Fresh Food Compartment	4.4 cu. ft.	(124 litre)

Electrical data:

Input,	120 volt	305 W
	12 volt	225 W

Energy consumption:

Consumption in 77°F (25°C) ambient, 41°F (5°C) in refrigerator.

AC	3.7 kWh/24h
DC	308 Ah/24h

Weight:	121 lbs	(55 kg)
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Door reversing kit, right to left.

Part number: 293 27 50-10 can be ordered from Origo.

Wiring diagram

